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ABSTRACT

Research has shown that student mid-term feedback has significantly increased subsequent ratings of teacher effectiveness, student achievement, and student attitudes when the feedback results were accompanied by expert consultation. A gap in the literature is an instrument intended to provide specific feedback on systematic planning and delivery of instructional activities that can enhance teaching along with student learning, and motivation. Specific feedback related to the Reiser and Dick Instructional Planning Model (1996) can fill this gap. Following a literature review, this paper proposes a study to examine the effect of mid-term student feedback and consultation related to the Reiser and Dick Model on teacher behaviors, student learning and motivation. The independent variable is mid-term student ratings feedback and consultation related to teacher utilization of the learning activities (2 levels). The dependent measures will assess the impact of the intervention on teacher systematic instruction behaviors through observations, interviews and surveys; student learning as measured by final exam scores on a common exam; and student motivation through surveys. Based on teacher interviews and surveys, the study will also address the utility of the Reiser and Dick model for Teacher Assistants. Appendices include: a comparison chart of feedback studies; Reiser and Dick Instructional Activities link to Gagne and Learning Theory; overview of the problem statement (The Effect of Student Ratings of Systematic Instruction on Teaching, Learning, and Motivation); instructional activities feedback form (Florida State University Evaluation Services); consultation interview protocol; classroom observation checklist; Keller's Course Interest Survey (Florida State University Evaluation Services); and an overview of procedure. (Contains 72 references.) (AEF)

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Running head: STUDENT RATINGS OF SYSTEMATIC INSTRUCTION

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A review of literature on formative evaluation of teachers through mid-term student feedback and how the Reiser and Dick Instructional Planning Model can enhance this feedback

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Abstract

Research has shown that student mid-term feedback has significantly increased subsequent student ratings of teacher effectiveness, student achievement and student attitudes when the feedback results were accompanied by expert consultation. A gap in the literature is an instrument intended to provide specific feedback on systematic planning and delivery of instructional activities that can enhance teaching along with student learning and motivation. Specific feedback related to the Reiser and Dick Instructional Planning Model can fill this gap.

A review of literature on formative evaluation of teachers through mid-term student feedback and how the Reiser and Dick Instructional Planning Model can enhance this feedback.

Ideally, teachers want to prepare and deliver the most effective lessons possible related to their course content so that students will effectively learn and also enjoy the learning process. There are numerous methods available to prepare teachers for this awesome responsibility such as formal pre-service teacher training, teaching workshops and assistantships, teaching manuals or simply 'learning by doing.' There are also numerous methods to assess the effectiveness of instruction by examining teaching behaviors, student performance and motivation in the classroom. Because of the increased number of students going to college and the increased research demands on university faculty, graduate student teaching assistants (TAs) teach many of the lower-level introductory courses. At a large Southeastern university, for example, TAs taught over 15,000 students across 39% of all the available courses offered in a Spring Semester (Frost, 1999).

Unfortunately, approximately 50% of TAs do not receive any formal teacher training and the majority of TAs that do attend training participate in limited one day workshops before each term (Shannon, Twale, & Moore, 1998). The content for most of these workshops is also quite broad and often ignores detailed training on developing specific lesson plans. A survey of 18 teacher training manuals from prominent universities found that "none of the topics that dealt with planning individual class sessions reached the 50% criterion" (Lowman & Mathie, 1993, p.87).

One mechanism available to nearly all TAs is student ratings feedback on their teaching ability at the end of the course. Guidance on using feedback from these ratings was mentioned in 83% of the teacher training manuals listed above. Many researchers (Abbott et al., 1990; Cohen, 1980; McKeachie et al. 1980; Mertler, 1996; Overall & Marsh, 1979; Marsh & Roche, 1993; Wu, 1993) have investigated the influence of these student ratings used at mid-term on teacher effectiveness. Many studies have shown significant differences in teaching effectiveness, student learning and student affect for those teachers who receive mid-term student ratings feedback, especially when combined with consultation.

The instruments used to provide feedback in such studies, however, are generally related to surveys of broad teaching constructs or behaviors that are found on typical end of semester student rating forms. McKeachie (1997) calls this instrument development process "dust bowl empiricism: that is, get a number of items about teaching and see what works."(p. 1223). Thus, a noted gap in the literature is a student rating instrument developed based on learning theory. Marsh (1984) adds: "An alternative approach [to student feedback rating forms] based on a theory of teaching or learning could be used to posit the evaluation dimensions, though such an approach does not seem to have been used in student evaluation research" (p. 709). A more detailed review of the literature will illustrate major findings of the student feedback rating research and then introduce another proposed study that attempts to pursue recommendations of the prominent researchers in this important research topic.

Review of Literature

History

Gage et. al. (1963) and Tuckman and Oliver (1968) are two of the earliest studies examining the effect of student ratings feedback on teacher behavior or effectiveness. Gage et. al. (1963) found that 6th grade teachers responded positively to student feedback and changed their behaviors toward student suggestions. Tuckman and Oliver's (1968) study examined 286 high school vocational technical teachers and found that teachers receiving student feedback significantly changed teacher behaviors more than non feedback groups. Ironically, they also found the teachers to be more responsive to student feedback than supervisor feedback (principals) or student feedback combined with supervisor feedback. Since these early studies, Greenwald (1997) found 176 more studies on the topic. The interest peaked from 1976-1980 with 71 studies reported and gradually dropped in the 80s and 90s with only 8 studies reported from 1991 to 1995.

Other researchers have extended the focus of student ratings beyond teaching effectiveness to student learning outcomes. Basically, if the students rate the teacher as more effective, then the students should learn more. Remmers, Martin, and Elliot (1949) published one of the first studies to examine this relationship of student ratings to learning with a multi-section design. Marsh (1984) describes the ideal conditions for such multi-section designs to enhance the validity of studies. These conditions basically require many sections of the same course teaching similar content and taking common exams. The overall learning correlation most frequently cited by meta-analyses of such studies is a moderate .4 to .5 (Cohen, 1981; d'Apollonia & Abrami, 1996, 1997). Cohen's meta-analysis (1987) of 41 studies found the following relationships of feedback

ratings with student achievement: Structure, .55; interaction, .52; skill, .50; overall course, .49; overall instructor, .45; learning, .39; rapport, .32; evaluation, .3; feedback, .28; and interest/motivation, .15.

After examining 25 years of research on this topic, Cashin (1995) and others agree that "In general, student ratings tend to be statistically reliable, valid, and relatively free from bias or the need for control: probably more so than any other data used for evaluation" (p. 6). Thus, there is a rich and worthwhile history of relevant research on this valuable topic.

Feedback Studies

Many studies have examined the impact of student ratings feedback on teaching, learning and affect in a variety of subjects, normally at the undergraduate level. Skeff (1983), however, also used feedback forms to examine the effect on the teaching effectiveness of doctors as rated by medical students.

Cohen (1980), and L'Hommedieu, Menges, and Brinko (1990) conducted meta-analyses of the most valid studies, 17 and 28 respectively, on this topic and identified overall effect sizes and methodological issues. While comparing these two meta-analyses, the influence of consultation combined with midterm student ratings feedback becomes quite apparent. While the overall effect size is .342 in L'Hommedieu's et. al (1990) analysis and .38 in Cohen's (1980) analysis, both analyses revealed much larger effect sizes for studies that combined personal consultation with the written summary feedback. The average effect size for the consultation studies in L'Hommedieu et. al (1990) was .86 (1.032 by removing an outlier) and .20 for non-consultation studies.

Cohen (1980) found similar differences in consultation studies with effect sizes averaging .64 and .20 for non-consultation studies.

Appendix A illustrates an expanded version of L'Hommedieu et al's (1990) comparison chart of feedback studies. This chart, arranged in order of effect size, highlights the methodological procedures and variables examined in 24 studies, using effect sizes found by L'Hommedieu et al (1990, p. 234). Most studies examine the effects of the feedback on teacher effectiveness as measured by a dimension performance on the feedback form. Several studies, however, have also examined the impact of ratings feedback performance on affective variables such as attitude toward the course, subject, or instructor (Erickson & Sheehan, 1976; McKeachie, et. al, 1980; Overall & Marsh, 1979).

Feedback Forms

There are nearly as many feedback form instruments as there are studies in this field. For example, the 24 studies highlighted in Appendix A used 23 different types of student rating forms. The first documented student rating feedback scale was the Purdue Rating Scale of Instruction in 1929 (Darr, 1977). As mentioned earlier, most of these forms are a collection of items that the using institution developed, factor analyzed and believes represent effective teaching.

Marsh's (1982) Students' Evaluation of Education Quality (SEEQ), which has a reliability of r = .9 with 25 person classes and higher reliability for larger classes, for example, has 9 dimensions of teaching. Erickson's Teaching Analysis by Students (TABS) (1976) has three dimensions (stimulation, organization, and evaluation) with similar reliability coefficients. Several other common dimensions are skill, rapport,

structure, clarity, difficulty, interaction, enthusiasm, and feedback to students (Cohen, 1980; Marsh & Roche, 1997; McKeachie, 1997).

It appears that the more specific the items on the feedback form, the more likely the students will be able to identify and evaluate the teacher's behavior. McKeachie (1994) states "...more specific items reporting perceptions or evaluations of teacher behaviors or specific aspects of the course are likely to be more helpful than very general items" (p. 328).

Validity Concerns

McKeachie (1997) also believes that "Student ratings are the single most valid source of data on teaching effectiveness"(p. 1219). Other researchers (Greenwald & Gillmore, 1997), however, question student ability to evaluate teachers and have examined several possible threats to the validity of such research.

One hypothesis is that the grading leniency may impact student ratings. Basically, if the teacher gives high grades, then students will rate them higher. Other possible variables or 'biases' that have been examined are prior student differences; instructor prior knowledge of exams; teacher experience, autonomy or expressivity; course discipline and level; class size; and student motivation (d'Apollonia & Abrami, 1997; Marsh, 1984; Marsh & Roche, 1997).

Other threats investigated include the 'John Henry' effect, halo effect (Marsh & Roche, 1993; McKeachie, 1997), and the 'Dr. Fox' effect. The 'Dr. Fox' effect implies that enthusiastic and entertaining instructors can "seduce" students into higher ratings (Marsh & Roche, 1993, p. 1193). Such an effect is normally captured by the feedback surveys that measure an 'enthusiasm' dimension. Marsh (1984) labels the attempt by

researchers to find bias in the feedback studies as a 'witch hunt' (p. 741). Overall, many researchers agree that bias in student ratings plays a very minor role (d'Appolloni & Abrami, 97; Marsh, 1987; McKeachie, 1997; Murray, 1984)

Recommendations for Future Research

Researchers have offered several recommendations to possibly improve the findings and utility of future research in this topic. Several researchers who reviewed the literature (Abrami, d'Apollonia, & Cohen, 90; d'Apollonia & Abrami, 1997; Marsh, 1984; McKeachie, 1997) suggest linking future feedback instruments to theories of cognition and motivation. Marsh and Roche (1997) also suggest linking student feedback ratings to more affective outcomes such as student motivation. Abrami, d'Apollonia, & Cohen (1990) suggest "increasing the quality and type of criterion measures used" (p. 230) for the outcome variable. Thus, using a feedback instrument related to learning theory and assessing its impact with a reliable instrument that assesses student motivation could contribute to a gap in the research in this worthwhile topic.

A Proposed Study

The following study attempts to explore several of the recommendations highlighted above and contribute to the gap in literature by using a feedback instrument related to learning theory. The study would also provide students with an opportunity to provide more specific feedback on specific teaching behaviors. Students would assess the teacher's frequency of systematic instructional learning activities that they can observe in the classroom. Detailed consultation to explain the feedback and offer strategies to implement more systematic learning activities should enhance teaching

behaviors, student learning and student motivation. Measuring student motivation with Keller's Course Interest Survey (1995) would also reveal more specific aspects of the impact on motivation.

Research has shown that systematically designed instruction can produce greater learning outcomes (Bowsher, 1989; Morgan, 1989), however, there is a tendency for teachers to ignore these proven principles (Reiser, 1994). Young, Reiser, and Dick (1998) studied nine teachers that were rated 'superior,' the top 1% of 1,500 teachers in a school district, and discovered that these teachers were not incorporating systematic planning principles into their lesson plans. Reiser and Mory (1991) even found that a teacher trained in the systematic design of instruction used 'sketchy' written planning techniques but did undergo an effective 'mental planning' process.

Gagne (1985) developed a systematic theory of instruction for learning based on his extensive study of the conditions of learning within the information processing learning theory (Gagne, Briggs, & Wager, 1992). His impact on the field of instructional design and technology is evident by his 131 citations in the literature from 1985-1990, which was the second most prominent in the field (Anglin and Towers, 1992). Reiser and Dick (1996) developed an instructional planning model for teachers that incorporates most of Gagne's nine events of instruction (See Annex B). Klein (1991) has shown that pre-service teachers can quickly learn and apply these principles. These principles apply to learning in general and should not be restricted to specific disciplines.

A critical component to Reiser and Dick's systematic planning model is to "Revise instruction in light of student performance on each objective and student attitudes towards your instructional activities" (1996, p. 9). Driscoll (1994) echoes this

principle by stating "The best guide to planning instructional events, then, is the students themselves" (p. 357). The Reiser and Dick instructional activities provide a systematic and 'teacher-friendly' tool for TAs to help improve their planning and delivery of instruction, which should ultimately enhance learning.

Statement of the Problem

The purpose of this study is to examine the effect of mid-term student feedback and consultation related to the Reiser and Dick (1996) instructional activities model on teacher behaviors, student learning and motivation. The independent variable is midterm student ratings feedback and consultation related to teacher utilization of the learning activities (2 levels). The dependent measures will assess the impact of the intervention on teacher systematic instruction behaviors through observations, interviews and surveys; student learning as measured by final exam scores on a common exam; and finally, student motivation through surveys. Based on teacher interviews and surveys, the study will also assess the utility of the Reiser and Dick model for TAs. Appendix C provides a graphic overview of the problem statement.

The research questions that I will investigate include:

1. Will midterm student feedback combined with consultation related to the Reiser and Dick instructional activities model:
   Change TA behaviors to increase use of systematic instructional activities in class?
2. .....Improve student learning?
3. .....Improve student motivation? And,
4. Do teachers think the Reiser and Dick instructional activities model is beneficial to enhance their instruction?

METHOD

Subjects

The study will examine approximately 36 TAs and their undergraduate student section(s) at a Southeastern University during the Fall 2000 term with a pilot study of 4 TAs in the preceding Spring term. The Departments of Computer Science and Chemistry have both committed to provide two TAs for the pilot study and approximately 18 TAs in the Fall for the lower level core classes on Computer Literacy and Basic Chemistry. These classes are solely taught and graded by the graduate (and some undergraduate) TAs. Each TA teaches between 18-24 students per section and normally has from 2 to 5 sections of the same course.

Shannon, Twale, and Hancock (1996) found that College of Education teachers use the greatest variety of teaching methods, while math and science teachers use the least. The Reiser and Dick model (1996) then, may be very helpful to the computer science and chemistry TAs in this study.

Independent Variables

Midterm feedback/consultation of student ratings on systematic instruction

The two levels of this variable are no feedback on student ratings (level 1) and written feedback with personal consultation (level 2). The midterm student feedback is directly related to Teaching Assistant (TA) behaviors reflecting systematic instruction according to the Reiser and Dick (R & D) Model (1996). The 'Instructional Activities Feedback Form' for gathering this feedback is in Appendix D. Questions for this form were designed to assess the frequency of TA use of the six instructional activities outlined in the Reiser and Dick model as well as the two additional activities of

remediation and enrichment. There are one to four specific questions that assess each activity, which the student can readily identify in class. Question #3, for example asks if the TA "Begins lesson with an interesting or exciting fact, demonstration, or story related to the class topic."

The consultation interview protocol (see Appendix E) provides constructive feedback to the teacher based on the results of the midterm feedback form and classroom observations. Consultation procedures outlined by Brinko (1990), Cohen and Herr (1982), Erickson and Erickson (1979), and Wilson (1986) provided excellent guidelines for developing the consultation protocol to enhance implementation of the feedback. The protocol also attempts to assess the instructor's willingness and feasibility to incorporate the instructional activities in future planning for classroom activities and how much the instructor values the feedback.

Dependent Measures

The dependent measures for this study will include teacher systematic instructional behaviors, student learning and motivation as well as a descriptive analysis of post intervention teacher beliefs about the utility of the Reiser and Dick model.

Teacher Systematic Instructional Behaviors

Teacher systematic instructional behaviors are defined as the teacher's use of systematic procedures to develop and deliver objectives based instruction with activities resembling the Reiser and Dick instructional activities model. This variable will be assessed through student feedback, observations, and self-report to triangulate the assessment.

The Instructional Activities Feedback Form (Appendix D), which will be administered to all students near mid and end of term, has 26 questions that assess TA systematic teaching behaviors by rating the frequency of using the Reiser and Dick instructional activities. For example, question #11 states "[The teacher] uses several relevant examples to illustrate the lesson topic" and the student must respond to a Likert-type scale ranging from almost never to almost always (for a typical class). The initial reliability of this instrument will be conducted during the pilot study.

The researcher will observe all TAs receiving feedback and selected TAs in the control group near the beginning and end of the semester using the Classroom Observation Checklist (Appendix F) to also assess TA behaviors. This qualitative data will descriptively summarize quantitative frequencies of behaviors in class and also provide more detailed descriptions of those behaviors. Murray (1983) found high correlations of behaviors in class with student ratings and concluded student ratings "can be accurately predicted from outside observer reports of specific classroom teaching behaviors" (1980, p. 31). Other researchers have also linked classroom observations to survey items (Land & Combs, 1981; Hines, Cruickshank, & Kennedy, 1982).

Interviews with the TAs, using a consultation interview protocol (Appendix E) will also measure the impact of the intervention on TA behaviors (e.g. Do TAs report using more systematic behaviors in class). For example, a midterm consultation question (#6) asks "Do you believe that you can incorporate these activities into your classes?" After the intervention, the question will be changed to "Were you able to successfully incorporate these activities into your classroom? How often?"

Student Learning

Student learning will be measured by computing each TAs average final exam score from a common course final exam (e.g. 81.3%). TAs will only be compared to other TAs in the same course (e.g. 18 in Computer Science, 18 in Chemistry). Overall and Marsh (1979) demonstrated significant differences in final exam scores between groups where all teachers administered the same exam for the same course.

Student Motivation

Student motivation in the classroom is defined as student interest in the class or subject content. All students will complete Keller's (1995) Course Interest Survey (CIS) (Appendix G) near the middle and end of term to measure their interest in the course. This instrument assesses Keller's (1987a, 1987b) ARCS motivation model components (attention, relevance, confidence, satisfaction) in a course. For example, question # 7 asks: "The instructor makes the subject matter of this course seem important." The instrument has the following reliability ratings: attention: 0.84; relevance: 0.84; confidence: 0.81; satisfaction: 0.88; overall: 0.95.

Beliefs on Utility of the Reiser and Dick Instructional Activities Model

Utility is defined as teacher and student beliefs that the Reiser and Dick activities are worthwhile for the teacher's academic course/discipline and the TA has an interest to use them in the future. The consultation interview protocol (Appendix D) administered to the experimental group has several questions that assess TA beliefs of the model's utility, such as question #6, which asks "Do you believe that you can incorporate these activities into your classes?" Students also have an indirect opportunity to comment on the models utility by responding to question #30 on the Instructional Activities Feedback

Form (Appendix C), which asks "How would you rate the usefulness of these activities for promoting learning in this course?"

Procedures

Appendix H graphically summarizes the procedures for the proposed study. The 36 volunteer TAs will be divided into stratified random samples to either the no feedback control group or the experimental feedback/consultation group. L'Hommedieu, Menges, and Brinko (1990) advise using stratified samples to enhance equivalent groups. Stratification will include teaching experience, subject and nationality. Wu (1993) found that TAs with the least experience benefited most from mid-term feedback.

The researcher will observe all TAs in the experimental feedback/consultation group and randomly selected TAs in the control group during the first month of classes to qualitatively assess the instructional activities taking place in a typical class period. The Classroom Observation Checklist (Appendix F) enables the observer to record the frequency, examples, and suggested alternatives of the Reiser and Dick model instructional activities.

Students in the TA classes from both groups will take the pretest in the 4th or 5th week of the term after the first graded assessment in the class. The pretest, which is actually an initial assessment of the TA and course, will consist of the Instructional Activities Feedback Form and the Course Interest Survey. Instructions for the surveys will follow standard student survey instructions with the students administering the surveys, collecting them, and depositing the sealed envelope of responses (with initials across the seal) into a pre-positioned confidential collection box which only the researcher has access. Surveys will be administered at the beginning of the class period

to reduce the student tendency to 'rush' through the form to depart the class quickly. Survey administration should last approximately 10-15 minutes.

Immediately after data analysis, the researcher will personally contact all 18 TAs in the feedback group to schedule an interview to review the results of the Instructional Activities Feedback Form before the end of the 6th week of classes. This interview will follow the Consultation Interview Protocol (Appendix E) and help identify strengths and weaknesses from the feedback form and classroom observation and possible implementation strategies. The control group will not receive any midterm feedback on the surveys.

The researcher will again observe all the TAs in the experimental group and selected TAs in the control group and record findings on the Classroom Observation Checklist. These observations will assess whether the TAs demonstrated more systematic teaching behaviors as a result of the feedback and consultation.

In the last two weeks of the term, both groups will receive the posttest, which will mirror the pretest using both the Instructional Activities Feedback form and the CIS. Administration and turn-in procedures will be identical to the pretest and last approximately 10-15 minutes. Again, it is critical that surveys are administered at the beginning of a class period (not a test period) to enhance student attention.

The *final exam scores* of the students will measure the impact of the intervention on student learning. All students take the same final exam for the same course curriculum in both courses. These exams are not cumulative and would only test the students on material they learned from the TA AFTER the midterm intervention. After final exams are graded, all TAs from both groups will submit their class exam

average by percentage (e.g. 83.4%) to the researcher for analysis. The researcher will also do a follow-up interview with the TAs to again assess the utility of the model and feedback for their future teaching.

Design and Data Analysis

This study combines experimental and qualitative methods to greater assess the impact of the instructional activities feedback and consultation on the dependent measures. TA class means will serve as the unit of analysis. I will use an ANCOVA for the experimental portion of the study to assess the group differences in TA behaviors, student learning and student motivation. The pretest will serve as the covariate to adjust the means of the groups. The analysis will examine overall differences in the 2 instruments as well as differences in dimension performance such as the attention, relevance, confidence and satisfaction dimensions for the CIS. Each instructional activity dimension will also be assessed. Additional possible covariates for motivation to be examined in the pilot study will include; student desire/likelihood to major in the department/field, number of hours (on average) they study/prepare for the course each week, or student pretest scores on the CIS.

Final exam scores will measure learning outcomes. Because I cannot randomly assign students to sections, I will attempt to statistically equivalate the groups using the following possible covariates for learning: High School GPA, math SAT score, or TA's midterm section average. The pilot study and a further review of the literature may help me solidify legitimate covariates for the students.

The qualitative findings from the classroom observations, interviews and open-ended survey questions on teaching, and utility will be summarized with descriptive statistics where possible as well as narrative illustrations.

Conclusion

Gagne and Driscoll (1988) state that "Besides the student who is learning, the most important agent in the educational program is the teacher. The teacher is responsible for arranging the student's environment to promote learning" (p. 2). Hopefully, the student's and researcher's feedback related to the systematic instruction principles outlined by Reiser and Dick (1996) will enhance the TA's ability to 'promote learning' in their classrooms.

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Appendix A

Comparison of Feedback Studies[1]

Author	FB Form	Pre/ Post-wk	Dependant Variables	#Grps (n@gp)	Group Chara.	Type Feedback	Results (Effect Size, Stats)
Erickson/ Erickson, 79	TABS	4/final (fnl)	*Dimension performance(3) & *Follow-up	2(15/16)	Profs-21 depts	Consult.	1.630, t-tests (no diff in pretest grps)
McKeachie et. al., 80	MSPTL	5-7/12	*Effective, *value of course, *impact on students, **psych thinking, **attitude toward psychology, attitude toward self	3(13-4)	TAs/Prof-Psych	Consult.	1.170, ANOVA (posttest only)
Bray/Howard, 80	IDEA	4/14	Behaviors/rating performance/self eval.	4(9-10)	TA-var. depts	Consult.	1.032, MANOVA
Hoyt, Howard,78	Local	7/fnl	*item/overall performance (perf.)	2(15/16)	Instr-var. dept.	Consult.	.695, ANCOVA (pretest)
Erickson, Sheehan, 76	TABS	4/fnl	Item performance,*attitude toward instructor, self eval of teachers	3(13/14)	Profs-30 depts	Consult.	.633, ANCOVA (pretest)
Cohen, Herr, 82	FACT	6/14	Dimension performance(6)	3(12/9/14)	TAs-7 depts	Written +	.545, ANCOVA (pretest)
Braunstein, 73	Local	8/15	Item performance (medians)	2(10/9)	Prof-Econ, psy	Written	.545, 2X2 Chi-square, nonparametric
Sepe, 73	SEIQ	mid/fnl	Item performance	3(11)	CC Instr-var depts	Written	.535, ANOVA
Payne/Hobbs, 79	FCEF	3/11qtr	Dimension performance (5)	2(37/41)	Educ. Profs	Personal	.5, ACOVA(pretest)
Marsh/Roche, 93	ASEEQ	mid/fnl/fnl[2]	*item/dimension/total perf., self rating	3(27)	Instr-various dept.	Consult.	.5, ANCOVA (pretest), multiple reg.
Ramsey, 81	SPOT	10/14	Performance, gender	3 (16)	Educ. Profs	Personal	.345, SP ANCOVA/1 item-gender
Smith, 77	Local	md/fnl	3 teach. Dimensions	2(6)	TAs-architecture	Written	.26, RBF-23, MANOVA
Overall/Marsh, 79	SEEQ	5/10qtr	*final exam, *affective, *dimension perf. (7)	2(12-18 sections)	Comp prog.course (751 students)	Personal (Grp)	.189, ANOVA, Regression, student = unit of analysis
Pambookian, 72	SOQ	6/15	Dim.performance, gender, Self ratings	2(13)	TAs-edpsych	Personal	.181, ANOVA,ANCOVA (pre), t-test
Centra, 73	SIR	mid/fnl	Teacher characteristics, *self ratings, item performance, Pretest effect	3(137/ 159/144)	Instr-5 colleges, 4 subjects	Written	.048, MANCOVA, Regression
Miller, 71	SSOT	4/fnl	Total item performance.**Learning	2(16/15)	English, Earth Science (2)	Written	.023, ANCOVA (midterm rating/exam)
Carter, 74	MISPI	3/10qtr	Item Performance, credibility	2(34)	TAs-6 depts	Written	0, MANOVA, ANOVA
Skeff, 83	Local	2/4	Trainee ratings, *self rating,*video	4(16)	Hospital Doctors	Personal	0, ANCOVA, Chi-square analysis
Froman, 80	UCSCT	3/fnl	Ratings, type feedback	4(21)	Instr-various dept.	Written	0, MANCOVA (pretest)
Wu, 93	Local	3/10qtr	*experience, item performance	2(21)	3 dept. prof/TAs	Written	0, MANOVA (assigned by course)
Rotem, 78	Local	4/10qtr	**Item perf., pretest effect, self eval	3-18/18/15	Instr-various dept.	Written	-.1,
Laasgaard, 71	Local	md/fnl	Item performance, experience	2(2x6)	Profs-various dept	Written	-.107, Factorial ANCOVA (experience)
Scott, 76	PRSI	m/f-qtr	Item performance	6(6)	CC Instr-var depts	Written	0, MANOVA, Solomon 4-group
Emmer, 74	CIS	mid/fnl	Item performance, self eval	2-15/14	Educ. Profs/TAs	Written	0, ANOVA (2X3)

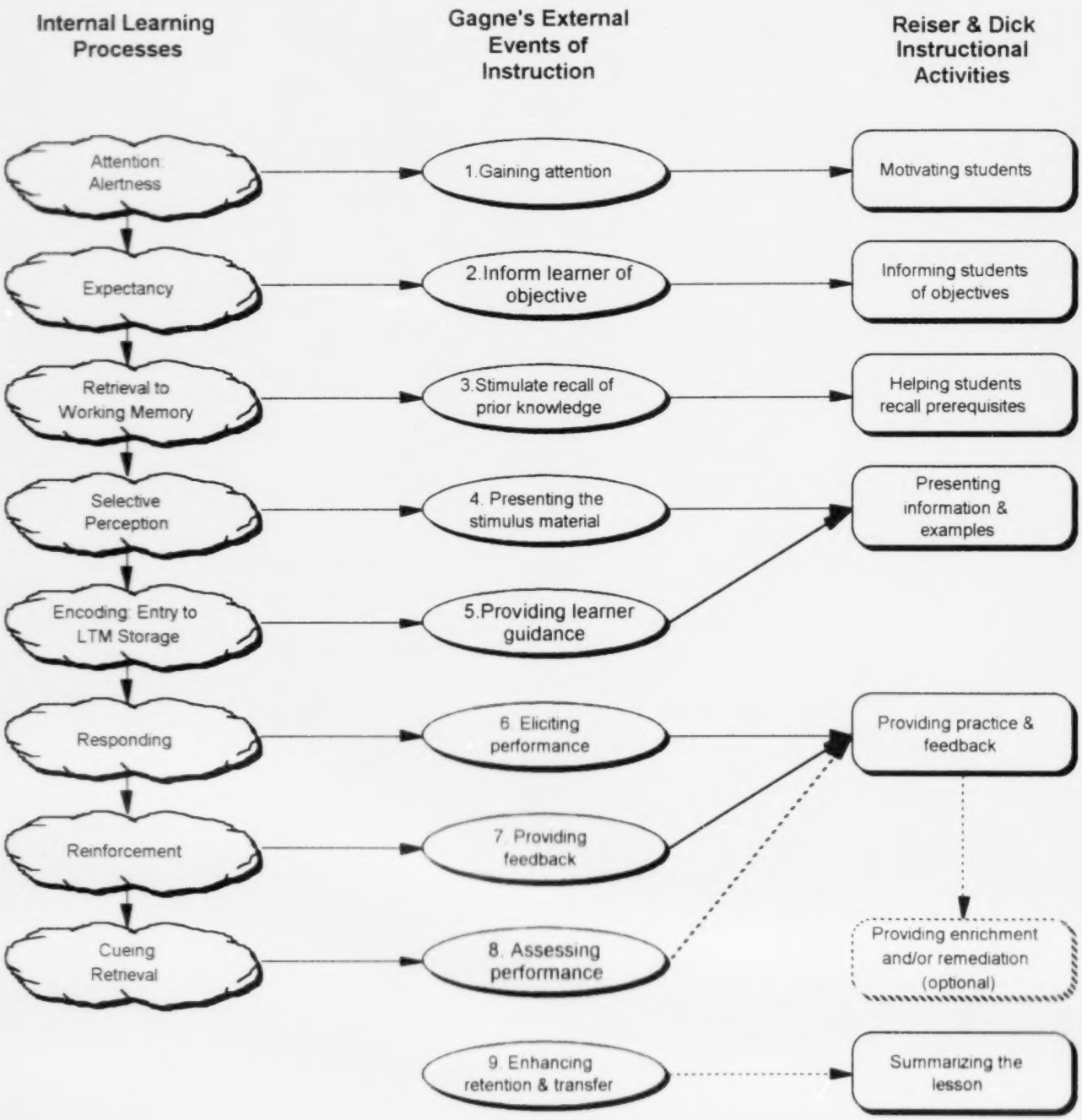
* Significant at $p < .05$ level

** Significant at $p < .05$ for 1 of several subgroups

[1] NOTE: This chart is an expansion of a meta-analysis by L'Hommedieu, R., Menges, R., and Brinko, K. (1990). Methodological explanations for the modest effects of feedback. Journal of Educational Psychology, 82(2), 232-241. All effect sizes are directly from their findings. Several of their studies were deleted and several studies were added to this chart.

Appendix B

[1]Reiser & Dick Instructional Activities Link to Gagne and Learning Theory



[1]**Note:** Learning process and instructional events from Gagne, (1985). The Conditions of Learning and Theory of Instruction, 4th ed. 1985. Dashed lines represent a possible, but not complete relationship

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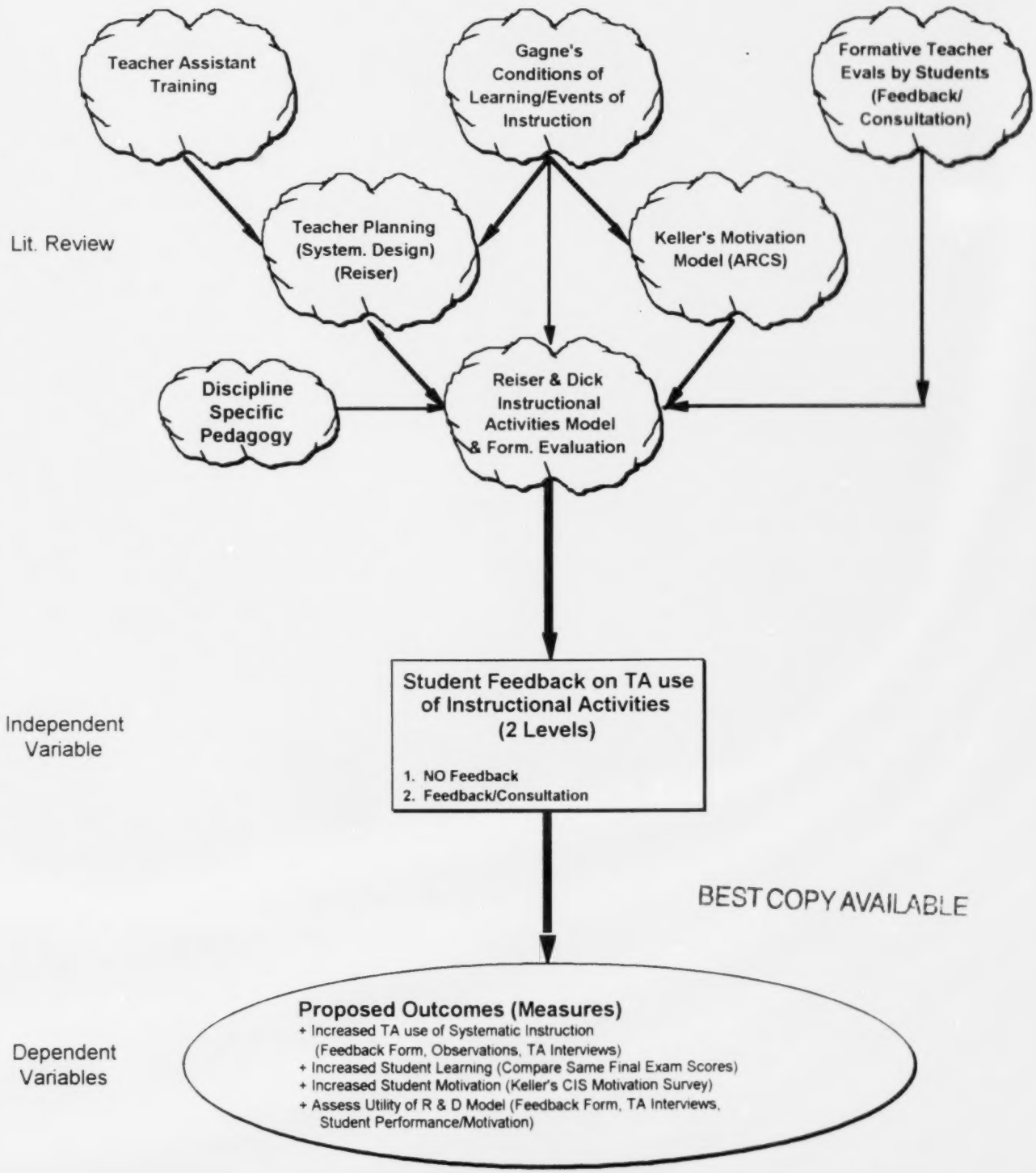
Appendix C

The Effect of Student Ratings of Systematic Instruction on Teaching, Learning and Motivation


Teacher Assistant Training
Gagne's Conditions of Learning/Events of Instruction
Formative Teacher Evals by Students (Feedback/ Consultation)
Lit. Review
Teacher Planning (System. Design) (Reiser)
Keller's Motivation Model (ARCS)
Discipline Specific Pedagogy
Reiser & Dick Instructional Activities Model & Form. Evaluation
Independent Variable
Student Feedback on TA use of Instructional Activities (2 Levels)
1. NO Feedback
2. Feedback/Consultation
Dependent Variables
Proposed Outcomes (Measures)
+ Increased TA use of Systematic Instruction (Feedback Form, Observations, TA Interviews)
+ Increased Student Learning (Compare Same Final Exam Scores)
+ Increased Student Motivation (Keller's CIS Motivation Survey)
+ Assess Utility of R & D Model (Feedback Form, TA Interviews, Student Performance/Motivation)

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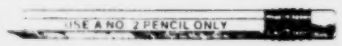
Appendix D

FLORIDA STATE UNIVERSITY—EVALUATION SERVICES

GENERAL PURPOSE SURVEY FORM

MARK ONLY ONE RESPONSE PER ITEM.

DO NOT STAPLE OR TEAR.



IMPROPER MARKS ✓ ✗ ●

PROPER MARK ●

Instructional Activities Feedback Form

Instructions: Your feedback may assist your teacher's preparation and delivery of future classes. Please answer all questions on the space provided using a **# 2 pencil.** Teachers will receive a typed summary of results and **NOT see** original handwritten comments. For the following questions, please estimate how often your teacher uses the following activities or behaviors **during a typical class period.** The ratings are:
A=Almost Never B=Infrequently C=Occassionally D=Often E=Almost Always

FOLD HERE ▶

FOLD HERE ▶

A. Almost NEVER
B. Infrequently
C. Occasionally
D. Often
E. Almost ALWAYS

1. What is your course name _____ and section #? _____ 1 A B C D E
2. What is your teacher's name? _____ 2 A B C D E
3. Begins lesson with an interesting or exciting fact, demonstration, or story related to the class topic..... 3 A B C D E
4. Actively involves students in discussions, games, or simulations in order to maintain your interest..... 4 A B C D E
5. Is enthusiastic about the course content and teaching..... 5 A B C D E
6. Offers praise, rewards, or recognition for correct answers, excellent ideas, or performance..... 6 A B C D E
7. Informs the class of the goals or objectives for each lesson. e.g. By the end of this lesson, you must know the following... 7 A B C D E
8. Reviews or refers to prior class topics/discussions that are relevant or necessary to understand the current lesson. 8 A B C D E
9. Informs the class of prerequisite skills or knowledge required to understand events in each lesson..... 9 A B C D E
10. Provides adequate information to understand the key points of each lesson topic..... 10 A B C D E
11. Uses several relevant examples to illustrate the lesson topic..... 11 A B C D E
12. Provides guidance to students to help them remember the key points or aspects of a topic. e.g. Remember the colors of the rainbow with the name 'ROY-G-BIV' 12 A B C D E
13. Provides an opportunity for the student to practice and demonstrate an understanding of the subject..... 13 A B C D E
14. Provides relevant practice problems in a context familiar to the student experiences or knowledge..... 14 A B C D E
15. Provides feedback related to the practice problems..... 15 A B C D E
16. Provides feedback that guides the students toward the desired outcomes by acknowledging correct answers and providing guidance to correct wrong answers. 16 A B C D E
17. Summarizes the important aspects of the lesson before dismissing the class..... 17 A B C D E
18. Reviews the objectives or goals of the lesson at the end of each lesson..... 18 A B C D E
19. Provides additional practice or instruction during or after class for students who did not understand the original instruction. 19 A B C D E
20. Provides enrichment opportunities beyond the normal class activities for students to apply what they learned in new and interesting situations. **(Continued on back)** 20 A B C D E

Directions: For the following list of instructional activities in items 22-29, **mark column A** if you would like your teacher to do **MORE** of that activity in class. Mark column B if it is adequately covered in class.

22. Motivating students to learn.....
    A=do **more** in class B=adequately covered in class
23. Informing students of the objectives for the lesson.....
24. Helping students recall prior knowledge essential for learning the new material.....
25. Presenting information and relevant examples about the lesson topic.....
26. Providing an opportunity for student practice and teacher feedback on the objectives.....
27. Summarizing the lesson.....
28. Providing additional practice or remediation opportunities for students.....
29. Providing enrichment opportunities for students who desire them.....
30. Overall, how would you rate the usefulness of the activities in questions 22-29 for learning in this course?.....
    A=Not at all B=Somewhat useful C=Useful D=Very Useful E=Extremely useful

FOLD HERE

The following questions allow you to provide more detailed feedback to your instructor and the researcher. Please write your answers in the space provided or mark the appropriate letter to the right where appropriate. To ensure confidentiality, your instructor will be given typed comments and **never** see the handwritten comments.

31. What is the likelihood that you will voluntarily take more classes in this department/field?.....
    A=Not at all B=Probably not C=Not sure D=Possible E=Definitely
32. How many hours (on average) do you study/prepare for this course **each week?**.....
    A= below ½ hour B= ½ to 1 hour C=1 to 1½ hours D=1½ to 2 hours E= over 2 hours
33. What is your current overall grade point average (GPA) estimate?.....
    A= below 2.0 B= 2.0 – 2.5 C= 2.6 – 3.0 D= 3.1 – 3.5 E= over 3.5
34. Which category best represents your highest math SAT score?.....
    A= below 400 B= 400 – 460 C= 470 – 530 D= 540 – 600 E= over 600
35. If you did not take the SAT, which category best represents your highest math ACT score?.....
    A= below 16 B= 16 – 19 C= 20 – 22 D= 23 – 26 E= over 26
36. Overall, How effective would you rate your teacher's instruction?.....
    A=Poor B=Below Average C=Average D=Above Average E=Excellent
37. Describe what you really like about your teacher's instruction.

38. Describe what you do **NOT** like about your teacher's instruction (if any).

FOLD HERE

Thank you for your honest feedback!

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

A.
B.
C.
D.
E.

SPECIAL CODING SECTION

A B C D E F G H I J

PLEASE DO NOT MARK IN THIS SPACE

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Mark Reflex© by NCS EM-228674-1 654321 ED06 Printed in U.S.A.

Appendix E: Consultation Interview Protocol

1. Name, course number, and section of teacher.
2. Thank teacher for volunteering to participate in this study and remind them that everything discussed is confidential and will not be shared with supervisors, peers etc.
3. How is the term going?
4. Give TA chapter 4 of Reiser and Dick text "Planning Instructional Activities." Show teacher results of the student midterm feedback forms (Group mean, individual mean) and advise, where appropriate, on integration of the Reiser and Dick instructional activities below:
    1. Motivating students to learn
    2. Informing students of the objectives for the lesson
    3. Helping students recall prior knowledge essential for learning the new material.
    4. Presenting information and relevant examples about the lesson topic.
    5. Providing an opportunity for student practice and teacher feedback on the objectives.
    6. Summarizing the lesson
    7. Providing additional practice or remediation opportunities for students.
    8. Providing enrichment opportunities for students who desire them.
5. Process student handwritten comments from survey.
6. Show them a model lesson plan that illustrates all these activities
7. Do you believe that you can incorporate these activities into your classes? If you have any questions about implementation during the semester, please don't hesitate to call me and I will gladly discuss it with you.
   (End of term: Was it difficult for you to incorporate these activities?)
8. How was this feedback useful to you?
9. Will this feedback help you improve your planning of classroom activities in the future? If yes, how will it help your planning?
10. Do you think this feedback will help you improve your effectiveness as a teacher (e.g. students will learn more and be more motivated to learn)?
11. How would you change the feedback form to make it more relevant to you?
12. How would you compare this type of feedback to the current SIRS form system?
13. Do you have any other suggestions to improve this student feedback system?
14. Thanks again for your time. Remind them of surveys and data required to collect at the end of the term.

Appendix F: Classroom Observation Checklist (Example)
Teacher: **Subject:** Computer Literacy **Date/Week/Time:**24 Jan/2/2-3
Lesson Sequence/Topic:
1minute=admin orientation, brief overview of class with list of topics
Rest of class: Info presentation & practice/feedback on each task

Instructional Activity (Frequency)	**Examples**	**Student Response/** ***[Alternative Activity (suggested by researcher)]***
Motivating Students 2	+ Colorful slides w/info and designs- helps gain student attention. + Relevance/attention-students had fun drawing in paint program to illustrate one of your points **Alternate activities continued----------→** *+[Learn their names]* *+[Don't forget to smile-be enthusiastic when they do well, e.g. this is an awesome drawing-future Picasso or Monet artist-→ but NEVER make fun]*	+ Students definitely engaged when you gave them the paint task. 100% doing task and having fun with it. (vs. doing own email, other homework etc.) *+[Expand on the paint activity to see who has the most original drawing, most bizarre & award prizes or recognition. Keeps them even more involved, excited]* *+[Use funny, catchy folder names to gain attention e.g. "Gatormeat"] Also see below*
Inform Students of Objectives ½	+ Introduced topic but no criterion mentioned. Today we will be discussing windows and email (pine), intro to operating systems. **Alternate activities continued----------→** *+[Would help if agenda and objectives for the class were up on the board or screen before class so students could see what is expected today. Helps activate their stored memory from reading, experience etc.]* *+[we will have a quiz at the end of class and you will have to successfully demonstrate the following to the following standard]*	-Attention really not captured by students *+[Tell them the standards for successful completion of each topic=criteria]* *+[Highlight operating system by saying "Today you will learn where Bill Gates went over a billion$ by introducing Windows 98 and then 2000]* *+[Highlight use of pine by showing a pine tree or bringing in a pine tree branch or bunch of pine needles-today's champion gets this as a prize]*
Help Recall Prerequisites 0	Not done	*+[link this lesson with the previous lesson. How certain content you learned from last lesson is necessary for this one]* *+[possibly show diagram of this block of unit one in computer literacy and where this fits in. e.g. here's where we started, where we are at now, and where we're headed next. Building blocks for upcoming lessons]*

(continued on back)

Classroom Observation Checklist (cont'd)

Activity	Examples	Response/*[Alt. Activity]*
Present Information & Examples I=21 E=16	+Admin req. for course/# disks, texts etc +DNS topic +PINE + Multitasking +Folders +OS +Difference between 95 & 98 OS +Composing a message +Go to address book +Defined hardware/example +Desktop +Right clicking +Open a drive +Min/Maximize a window +access control panel +open explore +copy file to folder	+Students answered question on desktop -Many students not following along, doing other things(email, one lady on victoria secret website *+[Keep examples as relevant as possible]* *+[When discussing difference between 95 & 98, could show $$$ and how Bill Gates got more money-show newspaper or times magazine picture]* *+[Walk around to ensure people are staying with you vs. looking at websites, doing email etc.]*
Practice & Feedback P=10 F=17	+log onto pine +gave them 3 minutes to do this +send email to self +create folder & rename it +address book +Hide and move task bar +copy file to folder +If you don't get it, let me help you +Feedback given to all students who raised hands with a question +Students practiced at least 10 different tasks +Quiz at end of class	+students were doing the tasks, but some not keeping up +several students asked relevant questions for clarification and were correctly answered *+[have a feedback system where you know that class is with you and ready for next step. E.g. a thumbs up when done, or a little cup or object you place on top of computer that has a Thumbs up! for student to put on top of computer when finished]*
Summarize Lesson 0		
Enrichment Activities (0)		
Remediation Activities (0)		
Other (Combined events etc.)	+Slide introduced each topic→Good transition	*+[Add criterion for the topic to reinforce what is expected of the student for that topic]*

Remarks:

Appendix G **FLORIDA STATE UNIVERSITY—EVALUATION SERVICES**

GENERAL PURPOSE SURVEY FORM

MARK ONLY ONE RESPONSE PER ITEM.

DO NOT STAPLE OR TEAR.

IMPROPER MARKS ✓ ✗ ●

PROPER MARK ●

Course Interest Survey

Instructions: Please think about each statement in relation to this course and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements. Please use a # 2 pencil to mark your response. Thank you. The ratings are:
A=NOT true B=Slightly true C=Moderately true D=Mostly true E=VERY true

FOLD HERE

		A. NOT true	B. Slightly true	C. Moderately true	D. Mostly true	E. VERY true
1.	What is your course name _____ and section #? _____					
2.	What is your teacher's name? _____					
3.	The instructor knows how to make us feel enthusiastic about the subject matter of this course					
4.	The things I am learning in this course will be useful to me					
5.	I feel confident that I will do well in this course					
6.	This class has very little in it that captures my attention					
7.	The instructor makes the subject matter of this course seem important					
8.	You have to be lucky to get good grades in this course					
9.	I have to work too hard to succeed in this course					
10.	I do **NOT** see how the content of this course relates to anything I already know					

FOLD HERE

		A. NOT true	B. Slightly true	C. Moderately true	D. Mostly true	E. VERY true
11.	Whether or not I succeed in this course is up to me					
12.	The instructor creates suspense when building up to a point					
13.	The subject matter of this course is just too difficult for me					
14.	I feel that this course gives me a lot of satisfaction					
15.	In this class, I try to set and achieve high standards of excellence					
16.	I feel that the grades or other recognition I receive are fair compared to other students					
17.	The students in this class seem curious about the subject matter					
18.	I enjoy working for this course					
19.	I feel satisfied with the instructor's evaluations of my work compared to how well I think I have done					
20.	I am pleased with the instructor's evaluations of my work compared to how well I think I have done					

(Continued on back)

21. I feel satisfied with what I am getting from this course..... 21 A B C D E

Remember: A=NOT true B=Slightly true C=Moderately true D=Mostly true E=VERY true

22. The content of this course relates to my expectations and goals..... 22 A B C D E

23. The instructor does unusual or surprising things that are interesting..... 23 A B C D E

24. The students actively participate in this class..... 24 A B C D E

25. To accomplish my goals, it is important that I do well in this course..... 25 A B C D E

26. The instructor uses an interesting variety of teaching techniques..... 26 A B C D E

27. I do NOT think I will benefit much from this course..... 27 A B C D E

28. I often daydream while in class..... 28 A B C D E

29. As I am taking this class, I believe that I can succeed if I try hard enough..... 29 A B C D E

30. The personal benefits of this course are clear to me..... 30 A B C D E

FOLD HERE ▶

31. My curiosity is often stimulated by the questions asked or the problems given on the subject matter in this class. 31 A B C D E

32. I find the challenge level in this course to be about right: neither too easy nor too hard..... 32 A B C D E

33. I feel rather disappointed with this course..... 33 A B C D E

34. I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback. 34 A B C D E

35. The amount of work I have to do is appropriate for this type of course..... 35 A B C D E

36. I get enough feedback to know how well I am doing..... 36 A B C D E

37 A B C D E

38 A B C D E

39 A B C D E

40 A B C D E

Thank you for your honest feedback!

FOLD HERE ▶

A. NOT true
B. Slightly true
C. Moderately true
D. Mostly true
E. VERY True

PLEASE DO NOT MARK IN THIS SPACE

SPECIAL CODING SECTION

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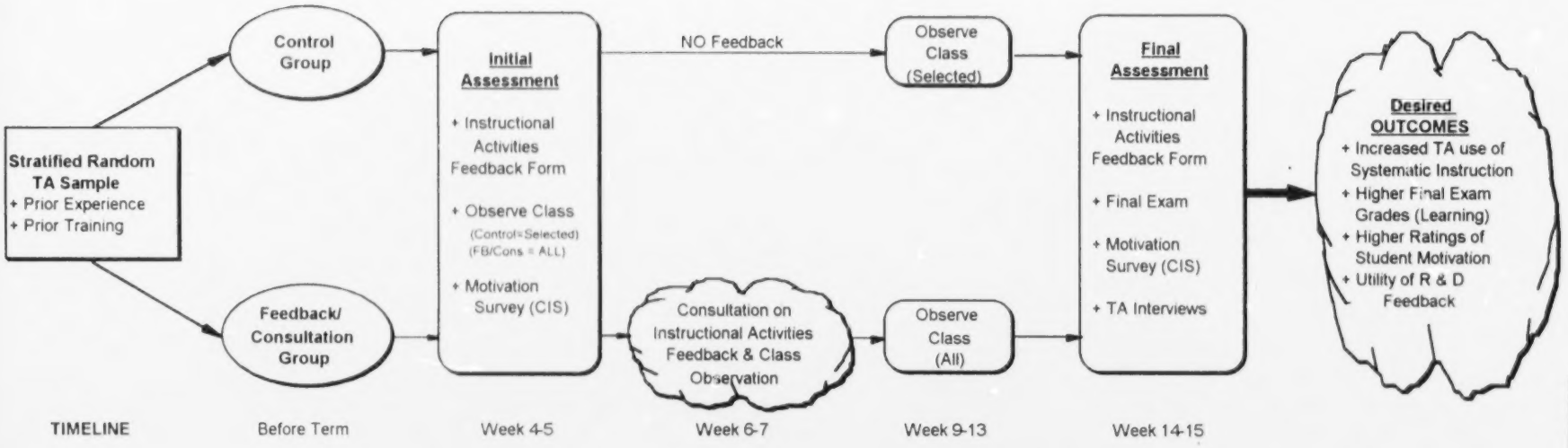
The Effect of Student Ratings of Systematic Instruction on Teaching, Learning and Motivation

PROCEDURE



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